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Abstract

This report covers the period July 1968-August 1969. During this time, library holdings increased to 10,728 items and a quarterly publication was the chief information dissemination tool. Studies completed during the period concerned the community college, practical nurse education, curriculum change in home economics; studies underway are a follow-up home economics study, a study on vocational education for the mentally retarded, and a survey of occupational proficiency tests. Other publications dealt with planning for vocational education, proposal preparation, and vocational education research conducted in New Jersey. "Technology for Children," a program of occupational education, was further developed and an evaluative study of 120 pilot and demonstration projects was conducted. Major sections of the report deal with: (1) information dissemination, (2) research, (3) curriculum development, (4) program planning, (5) pilot and demonstration projects, (6) "Technology for Children," and (7) facilities planning. (JK)

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NEW JERSEY RESEARCH COORDINATING UNIT FOR VOCATIONAL EDUCATION

SEPTEMBER, 1969

U.S. DEPARTMENT OF
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NEW JERSEY RESEARCH COORDINATING UNIT FOR VOCATIONAL EDUCATION

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U. S. DEPARTMENT OF

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I. INTRODUCTION

The New Jersey Research Coordinating Unit was established on July 1, 1965, as a result of the invitation by the U. S. Commissioner of Education to submit proposals for the establishment of RCU's in the states. Officially known as the Occupational Research and Development Branch of the Division of Vocational Education, New Jersey State Department of Education, the RCU has been housed in, and became an integral part of, the Division of Vocational Education.

The original RCU project successfully completed three years of operation under the directorship of Dr. Ralph LoCascio. The project ended on June 30, 1968. Continued federal support was given to New Jersey for enlarging the efforts of the Research Coordinating Unit until August, 1969. During this period, the RCU was operated under the directorship of Dr. Morton Margules.

The present report covers the time period from July 1, 1968, to August 31, 1969. It summarizes the major accomplishments of the RCU during the period. Detailed accounts of the activities may be found in the previously submitted quarterly progress reports.

During its four years of growth, the New Jersey RCU has been able to increase both its staff and the scope of its service. Evaluation of its accomplishments in terms of both quantity and quality of work is satisfactory. However, vocational education in New Jersey is rapidly expanding, and to meet the urgent needs a greatly expanded program of occupational research and development is imperative. Under the leadership of the State Officials and the continued support of the

the U. S. Office of Education, it is anticipated that occupational research and development activities and services in the State of New Jersey will continue to grow.

II. INFORMATION DISSEMINATION

The Occupational Research and Development Resource Center personnel provided extensive assistance and participation in the development of two major state publications:

1. Plan for Action, an initial draft of a summary of the findings of the New Jersey Master Plan Committee for Vocational Education through 1980
2. State Plan for Vocational Education

Resource Center personnel also participated in two major developments at the ERIC Clearinghouse on Vocational and Technical Education at Ohio State University:

1. The production of a document entitled Guide for a State Vocational-Technical Education Dissemination System, and
2. Participation in a national study of vocational-technical target populations of the ERIC system, as one of seven pilot states chosen by the VT ERIC Clearinghouse.

The resources of the Center have grown to include the following:

Type of Resource	
1. Hard cover (paper) research studies	1,100
2. Bound volumes (mainly curriculum)	500
3. Pamphlets in vertical file	850
4. Microfiche documents sets:	
A. Office of Education Reports, 1956-65	1,214
B. Pacesetters in Innovation,	1,982
C. Research in Education reports, 1966 to present	300
D. Selected Documents on the Disadvantaged	2,740
E. Manpower Research, 1966-67	392
F. AIM and ARM, Fall '67-through Winter '68	1,650
Total Items Available	10,728

Tools for dissemination of vocational-technical education information in New Jersey were studied. Feedback of Occupational Research and Development, a quarterly publication with a mailing list of over 6,000, remained the chief tool for dissemination. A plan for a more varied approach was developed to also include the following as soon as possible:

1. Current Research and Discussion in Vocational Education, a monthly alerting tool to ARM and 25 key journals, using a key word format
2. Source Book of Research Titles and Related Materials in Vocational-Technical Education, 1968-1969; A Compilation of Acquisitions of the New Jersey Occupational Research and Development Center (already published)
3. A Compilation of Resource Lists for Vocational Educators: An Annotated Bibliography of Bibliographies in Vocational Education, 1960-1969.
4. An Inventory of New Jersey Research Concerning Vocational Education: A List of Projects and Reports, 1931-1969.
5. A system for selective dissemination to specific individuals to meet specific needs.

An evaluation of the Resource Center and its services to Division Staff was carried out using a questionnaire. The number of resources and the availability of specific resources desired were typically scored as "fair" to "good". Center personnel were almost unanimously scored as "good" in their availability, effectiveness and initiative. Useful information concerning the physical setting and the equipment was gained.

III. RESEARCH

A. Completed Studies

1. "A Study of the Role of the Community College in the Development of Self and Occupational Concepts" was conducted by Bruce Tuckman and Angelo Gillie of Rutgers University in cooperation with the staff of the Division of Vocational Education. The purpose of this study was to determine the amount and nature of the identification by students at Middlesex County Community College with different occupations and to compare this with the occupational concepts of non-college students and Rutgers University students. Phase I of this study has been completed and its findings will provide information as to the occupational information function of the county college experience.

2. "A Study of the Value of Student Exposure to Health Agencies during the Pre-Clinical Portion of the Practical Nursing Program" was conducted by Joan Birchenall. The research was designed to determine whether practical nursing students' early exposure to patient care situations during the pre-clinical phase would produce significant changes in acquisition of knowledge and performance of skills. It was found that those students who had had planned patient-care experiences during the pre-clinical period received significant higher performance ratings than those who had not had those experiences in the hospital setting. However, no statistically significant difference was found in achievement of knowledge learning between the two groups.

3. "Investigation of the Effectiveness of a Design for Initiating Curriculum Change in Home Economics"--This was an action research project conducted at Rutgers University by Dr. Mary B. Kievit. Phase I of the research included a pilot study to test the effectiveness of the design. Although the results of this phase have demonstrated the adequacy of the design, it was concluded that a follow-up study would be needed to ascertain the effectiveness of in-service workshops in bringing about curriculum changes in home economics.

B. <u>On-going Studies</u>

1. "A Study of the Principles and Procedures of Introducing Educable Mental Retardates into a regular Vocational-Technical High School" --A comprehensive plan to integrate educable mentally retarded students into the county vocational and technical high school has been initiated at the Burlington County Vocational-Technical High School in Mount Holly. Dr. Marietta O. Gruenert, Professor of Special Education form Paterson State College, is the author and director of the Study. The ultimate goal of the project is to prepare educable mentally retarded students for business and industry by educating and training these students to give them marketable skills. In this way, it is hoped to meet existing industrial needs for workers in marginal and services areas and, at the same time, to reduce the number of hard core unemployable mental retardates. It is felt that the county vocational high school with its scope and depth of curriculum offerings is best suited to meet these needs.

2. "A Follow-up Study of the Effectiveness of a Design for Initiating Curriculum Change in Home Economics"--The follow-up study started from July 1, 1969, and will be completed before June 30, 1970. The principal investigator will be Dr. Mary B. Kievit of Rutgers University. The objectives of the follow-up study are to ascertain:

   (a) the number of teacher participants in teacher-led in-service workshops who after fifteen months have in fact initiated curriculum change in home economics;

   (b) the extent to which the number of teachers modifying curriculum exceeds the frequency with which such change could have been expected to occur without the benefit of teacher-led in-service workshops;

   (c) whether participants who modify curriculum differ significantly on selected characteristics from those participants who do not modify curriculum.

3. "Survey of Occupational Proficiency Tests"--The proposal of this study was initiated by Dr. Benjamin Shimberg of Educational Testing Service, Princeton, New Jersey. The project, which was started on July 1, 1969, and will end on June 30, 1970, was designed to encourage the establishment of sound evaluation practices in vocational education by providing up-to-date information about (1) available published tests and other evaluation instruments, and (2) procedures for developing performance measures to evaluate occupational competency.

C. Others

1. A manual entitled Guidelines for the Preparation of Proposals for Research, Training, Experimental, and Exemplary Programs in Vocational Education was developed by Dr. Po-yen Koo to assist researchers in the preparation and processing of proposals for financial support. The manual is available at the Bureau of Occupational Research Development, Division of Vocational Education, New Jersey State Department of Education, 225 W. State Street, Trenton, New Jersey 08625.

2. An Inventory of New Jersey Research Concerning Vocational Education was compiled by Mr. Edwin G. York. The inventory lists research projects and research reports in the field of vocational education conducted in New Jersey or concerning New Jersey since 1931. A total of 364 research projects and reports were listed in the inventory.

3. The New Jersey State Board of Education authorized funding of a workshop project designed to help prepare urban secondary school teachers prepare and conduct demonstration programs of consumer education in other high schools. These programs are structured to focus on the needs of disadvantaged persons in urban areas.

4. Funding has been authorized for an investigation and interpretive study of potential human resources presently available among the population of mature women in New Jersey to fill existing job needs in the total field of home economics. Specific recommendations will be made regarding innovative programs to prepare and utilize mature women for identified employment opportunities.

5. Efforts were made to stimulate development and coordinate all of the research activities in vocational and occupational education in New Jersey. A steering committee was organized under the name of New Jersey RCU Steering Committee for Research. Serving on the Committee are professional representatives of such fields as economics, labor, industry, and occupational education.

IV. CURRICULUM DEVELOPMENT

1. The Director of Vocational Curriculum and Instructional Media Research served in advisory capacity throughout the State both at the State and the county levels. He served as a consultant in the review and discussion of vocational curriculum needs in many school districts in New Jersey.
2. The Director of Curriculum Research continued to maintain the responsibility of supervising the review, acceptance, and recommendations for State Board of Education approval of all vocational courses of study outlines submitted from local districts to the Division of Vocational Education.
3. Coordination was maintained with the Director of Facilities Planning in reviewing local school district building plans, particularly with an interest in adequate curriculum implementation in new facilities.
4. Curriculum development is considered one of the most important functions of the RCU. In order to strengthen the work of the Curriculum Laboratory now housed at the Rutgers University, close liaison will be maintained between the RCU and the Laboratory. A position will be developed at the RCU to survey and determine areas in which curriculum innovation is most needed.

V. PROGRAM PLANNING

The master planning activities in New Jersey was reported in the last interim report submitted in July, 1968. A compendium of the reports submitted by the Master Plan For Vocational Education Committees was prepared for the State Board of Education. Upon receipt of the reports, the State Board requested the personnel of the Division of Vocational Education to synthesize the recommendations and develop a PLAN FOR ACTION.

The PLAN FOR ACTION was completed by Dr. Margules and the RCU staff as an initial draft in March, 1969, and was used ever since as a basis in the development of the State Plan for Vocational Education. The Director of Program Planning and the Director of Program Evaluation, both members of the RCU, were assigned major roles in the preparation of the State Plan.

The State Plan was approved by the State Vocational Education Advisory Council in May, 1969, and by the State Board of Education in its June meeting. The Plan has been approved by the U. S. Office of Education.

Planning is a continuous activity of the RCU. Two research associates will join the RCU on part-time basis to assist the Director of Program Planning to continue master planning in vocational and technical education in the State and to make preparation for the State Plan for 1970-71.

VI. PILOT AND DEMONSTRATION PROJECTS

For the 1968-69 year, a total of 111 new proposals for pilot and demonstration projects were approved by the State Board of Education and the sum of $1,141,822 was alloted for the new projects. A total of 369 second and third year pilot and demonstration projects were renewed and State and/or Federal funds in the amount of $2,303,602 were appropriated for these renewals.

An evaluative study was conducted on the 129 pilot projects in occupational education that were completing their third year of funded operation during 1968. Staff members of the Division of Vocational Education visited and reviewed all of the projects in accordance with the Assessment Guidelines prepared prior to the visits. In addition, the Cybern Education, Inc. was contracted to conduct questionnaire surveys of a ten-percent random sample totaling 1,413 of the workers who were the graduates of the pilot projects and a comparable control group of 762, matched on important variables (including job placement) who were graduates of other high school programs.

Important results of the evaluation are summarized as follows:

A. <u>THE PROJECTS</u>

Ratings of the projects were done on a total of 50 criteria established prior to site visits. The ratings show that the projects were judged, overall, to be "good" or "very good". Only one sub-program, Technical Occupations, had substantial representation below the "good" level. Superior ratings were related particularly to the following

three criteria:

(1) The quality of instruction provided in the project was judged by the appropriate supervisor to be adequate.

(2) The methods of instruction used in the project were consistent with the ability levels of the participants.

(3) Liaison with the Division of Vocational Education was adequate.

B. THE GRADUATES

Identical questionnaires were directed to the pilot graduates and the control groups. Included were questions about the adequacy of the graduate's school preparation for his job, about his job, his income, and his work history. Analyses of the responses reveal that:

(1) Significantly more project graduates were in the vocational field for which they had prepared in school than the comparison graduates (controls).

(2) The graduates of the two groups did not differ in their judgments of the adequacy of their school preparation for their current jobs. Over half of each group said they were "well" or "very well" prepared.

(3) Those who had graduated from an Office Occupation project reported greater job satisfaction and a greater likelihood of being employed in the field

for which they had been trained. In other areas, however, no difference was reported in job satisfaction by those employed.

(4) Three fifths in both groups were making $85.00 a week or less.

Another questionnaire was sent to the employers, who reported that approximately half of both groups were considered "better" or "much better" than other workers of about the same age and experience. Both groups were seen as having equally good work habits and good attitudes toward their jobs. They also found that the graduates of Office Occupations projects had more ability and better work habits than the controls.

C. CONCLUSIONS

In the guidelines for development of pilot programs prepared by the Occupational Research and Development Branch, it was stated that the principal goals of the pilot projects should be:

A. To broaden the base for vocational and technical educa- offerings in the State of New Jersey by providing additional settings for innovative occupational instruction that will enable students to gain the knowledge and skills which are essential for entry employment in a cluster of occupations.

B. To help students become aware of and utilize their intellectual, manipulative, creative, and social capa-

bilities through real and vicarious experiences.

In view of the above stated goals, we feel that the pilot projects have contributed to broadening the base for vocational education in the State. During the year 1967-68 there were 566 Pilot and Demonstration Projects in operation in comprehensive high schools, Vocational-Technical high schools, and certain selected State colleges and universities.

It is suggested by the evidence available that graduates who have received Pilot Project training have utilized the results of this training. It appears that they have been placed in jobs faster than the graduates who were not in the Pilot Projects. It is also evident that more of these graduates enter occupations for which they had been trained than did the comparison graduates.

The Cybern report has pointed out that the questionnaire responses from the graduates of pilot Office Occupations programs revealed significantly greater job satisfaction and greater likelihood of being employed. The employer questionnaire responses also reported that these graduates had significantly better ability and work habits than the controls. Further investigation should be made by the Division of Vocational Education to find out just what factors have accounted for the estraordinary success of the Office

Occupations pilot programs. Findings from such investigations may well lead to a curriculum reform in other vocational programs.

The concept of the pilot program was one of an experimental nature. The basic goal was to create new approaches in curriculum construction and/or instructional methods resulting in improved learning outcomes. In view of these goals it was decided to encourage as many schools as possible to implement pilot and demonstration programs.

The results have shown that while all programs were not totally "successful" there were no failures. Much has been learned from all programs about the problems and their solutions in achieving break-throughs in new techniques.

VII. TECHNOLOGY FOR CHILDREN

The Technology for Children Project, in its fourth year of development, was initiated in New Jersey by Dr. Robert M. Worthington, Assistant Commissioner, Division of Vocational Education, and implemented with the utilization of State funds. In addition, an initial Ford Foundation grant of $166,000.00 was garnered by the first Director, Miss Elizabeth Hunt. In September 1968, Dr. Fred J. Dreves, Jr., was appointed to the directorship.

The original overall objectives were: (1) to enhance the learning process at the elementary school level, and (2) to enlarge the child's understanding of vocational choice and to develop his economic competence in a changing world of work, through establishing a systematic program of occupational education throughout grades K-12.

The elementary classroom teacher was identified as a key person involved in order to carry out these objectives. Four six-week summer training institutes (1966-1969) were conducted for New Jersey elementary classroom teachers. During the fall of 1968, workshops were held for 13 teachers from the New Jersey School for Boys at Skillman, and five elementary teachers from the Camden school district. A 1969 spring semester course was sponsored by the State Department of Education and Trenton State College in Technology for Children at the Marie H. Katzenback School for the Deaf in West Trenton, New Jersey.

The four summer institutes, the two workshops and the college course resulted in 81 elementary classroom teachers in 48 schools becoming self-sufficient directors of technological activities and thereby enhancing the total learning process of an estimated 2,430 children.

The Technology for Children Project has undertaken to affect change in the learning process of elementary children in New Jersey by providing alternative curricular experiences of a technological nature. To facilitate change in this developing situation, the Technology for Children Project staff has provided participating teachers the following supportive services:

1. Consultant assistance
2. A monthly newsletter
3. A T4CP Resource Center--Florence, New Jersey
    a. Software and Hardware lending services
    b. Developmental area for curriculum innovation
4. Demonstrations of modern technological equipment
5. Forty-four curriculum "Episodes" designed to provide the step-by-step directions for the successful introduction, implementation and completion of technological activities

In April of 1969, the second three-year phase of the Technology for Children Project was approved for funding by the Ford Foundation in the amount of $303,460.00. This funding will enable the Technology for Children Project, in the next three years, to:

1. Expand its scope to the elementary teachers in target urban areas, as well as the remainder of New Jersey's twenty-one counties.
2. Intensify evaluation of the Technology for Children Project approach.
3. Develop, organize, and structure curriculum materials for purposes of producing a guide to be utilized in the pre-service preparation of elementary teachers in New Jersey.

While the Technology for Children Project is aiming at extension and expansion, evaluation efforts are being made to assess the Project's true value and to find out its strengths and weaknesses.

VIII. VOCATIONAL FACILITIES PLANNING

Facility planning activities have been active during the past year, with emphasis placed on new construction in city and county area vocational-technical schools. Revision was completed on New Jersey Vocational Facilities Guidelines, covering minimum standards in Industrial Arts, Vocational and Technical Education Construction. With the assistance of the Director of Facilities Planning, many schools have been able to review their own facilities in light of the Guidelines.

In order to promote better planning of vocational education facilities, a series of development meetings were conducted, including meetings of the New Jersey Council for Vocational Education Facility Planners, the Advisory Board of the Council, and Quarterly Facilities Workshops. In addition, the Director of Facilities Planning has traveled extensively in the State in order to help the individual schools solve their problems in facilities planning or improvement.

On July 1, 1969, the position of the Director of Facility Planning was transferred to the Bureau of Area Vocational-Technical and Private Schools. From now on the function of facilities planning in the Division of Vocational Education will be more of the nature of service than that of research.

IX. CONCLUSION

The foregoing pages present a cross-section of the services and activities of the New Jersey RCU in the period between July, 1968, and August, 1969. The accomplishments of the RCU so far seem to have very well justified all of the funds it has expended. As the needs for service by the RCU are increasing, it is certain that the New Jersey Occupational Research Development Bureau will play an important role in the future development of vocational and technical education in the State.

As recorded in the past quarterly reports, the New Jersey RCU has been constantly facing a number of problems, among which the following are the more important ones:

. Difficulty in data acquisition

. Need of more qualified personnel

. Need of adequate space

. Need of appropriate funds to meet research and other needs

It is felt that the crucial one of all the problems is the lack of funds to meet the increasing needs of RCU services in the State. When and if the authorized funding of the Vocational Education Amendments of 1968 can be fully appropriated, the difficulties in rendering RCU services may be greatly reduced.

Looking into the future needs of Vocational and Technical Education in the State, we believe that the function and services of the RCU must be kept flexible and dynamic in order to cope with the changing nature of society. As the complexity of the social structure increases, better cooperation and coordination, within the State and interstate, will insure the continued success of the RCU services. In this regard, it is our belief that continued Federal leadership is both necessary & important.